

This report is preliminary and has not been edited or reviewed for conformity with U.S. Geological Survey standards,

Approx. mean high water line, in 1950 interpreted from U.S. Surveys 282 and 1168, dated 1901 and 1917 respectively

TRUE NORTH  
MAGNETIC NORTH  
APPROX. MEAN DECLINATION, 1961

Base from U.S. Geol. Survey Petersburg D-3, Alaska, 1961; Alaska Div. Aviation, 1963, 1972; Alaska Dept. Highways, 1969, 1971.

Geology mapped by R. W. Lemke and L. A. Yehle in 1965, by L. A. Yehle in 1968, and by R. W. Lemke in 1972; airphoto interpretation by L. A. Yehle in 1977.

# DESCRIPTION OF MAP UNITS

## SURFICIAL DEPOSITS

- Qf** ARTIFICIAL FILL (HOLOCENE)--The larger joined areas of fill plus the larger joined areas of ground extensively modified during construction; many smaller separated areas not mapped. The largest volume of fill consists of irregular pieces of graywacke bedrock quarried from south of the map area and used for airport construction. Lesser amounts of fill used throughout the area have been obtained from (1) the quarry south of Sandy Beach, south of map area, (2) shore and delta deposits, (3) emerged shore deposits, and (4) diamicton. Thickness of artificial fill may average 1.5 m and the maximum, at the airport runway, possibly is 9 m. Underlain mostly by organic deposits except near shoreline
- Qo** ORGANIC DEPOSITS (HOLOCENE)--Chiefly moist, treeless muskeg terrain with numerous small ponds. Deposits consist of interstratified sedges, mosses, and some wood fragments all in various stages of decomposition and consolidation. Thickness may average 2.5 m; maximum possibly 7.5 m. If thickness less than 2 m, the underlying geologic material, chiefly diamicton, is mapped. Muskeg as mapped may be overlain by artificial fill to depths of as much as 1 m
- Qsd** MODERN SHORE AND DELTA DEPOSITS (HOLOCENE)--Shore component chiefly pebbles and/or cobbles with some sand and boulders; material generally more coarse in berm of storm beach. Delta component mostly pebbly sand and sand and some silt. Mapped up to highest high tide and includes storm beach. Loose, mostly moderately well-sorted. Thickness of shore deposits may average 1.5 m; maximum possibly 3 m. Thickness of delta deposits may average 2 m; maximum possibly 6 m. Mostly overlies diamicton

- Qa** ALLUVIAL DEPOSITS (HOLOCENE)--Probably sand and pebble gravel with some cobbles and a few boulders. Developed by small streams through erosion of underlying geologic materials, mostly diamicton. Thickness possibly averages 1.5 m, maximum 4.5 m. Overlain in many places by organic deposits some of which may be thicker than 1 m
- Qdf** MIXED DEPOSITS, MOSTLY DIAMICTON AND FINE-GRAINED DEPOSITS (PLEISTOCENE AND HOLOCENE)--Diamicton (unsorted stony to stone-sparse silt and clay with sand) and fine-grained deposits of silt-clay. Deposits grade into one another both horizontally and vertically. Thickness of deposits, together, may average 15 m and have a maximum of about 60 m. Lesser amounts of uniform sand or sandy pebble gravel as patches as much as 2 m thick cover and commonly merge vertically with diamicton. Many deposits fossiliferous. Formed by glaciomarine, marine, glacial, wave, and tidal processes. Underlain by bedrock. Overlain almost everywhere by obscuring mantle of organic materials probably as much as 2 m thick; where organic deposits thought to be thicker than 2 m, they instead are mapped.

## BEDROCK

- Mm** METAMORPHIC ROCKS (MIDDLE(?) JURASSIC TO LOWER CRETACEOUS)--Mostly phyllite and probably some graywacke and lesser amounts of argillite, and slate. Hard; upon weathering, locally breaks into very thin layers
- Mm?** Areas possibly underlain by metamorphic rocks within 1.5 m of surface

**NOTES:** Distribution of map units almost exclusively determined by airphoto interpretation; units as mapped considered to be 1 m or more thick except organic deposits which are 2 m or more thick. Mean lower low waterline is lower limit of mapping. Terminology of sediment-grain sizes follows Wentworth (1922): clay, less than 0.0039 mm; silt, 0.0039-0.0625 mm; granule, 2-4 mm; pebble, 4-64 mm; cobble, 64-256 mm; boulder, greater than 256 mm

## CORRELATION OF MAP UNITS

Artificial fill	Organic deposits	Modern shore and delta deposits	Alluvial deposits	Mixed deposits	Metamorphic rocks	
Qf	Qo	Qsd	Qa	Qdf	Mm?	
					Mm	
						Holocene } QUATERNARY
						Pleistocene }
						MIDDLE(?) JURASSIC TO LOWER CRETACEOUS

FIGURE 3.--RECONNAISSANCE GEOLOGIC MAP OF THE PETERSBURG AREA, ALASKA